WHAT IS CLAIMED IS:

1. A multi-piece solid golf ball comprising a core consisting of an inner core and an outer core formed on the inner core, and one or more layers of cover covering the core,

wherein the inner core has a diameter of 30 to 40.4 mm and a surface hardness in JIS-C hardness of 60 to 85, and a center hardness in JIS-C hardness of the inner core is lower than the surface hardness by 5 to 30, and

the outer core has a thickness of 0.2 to 1.3 mm, and a surface hardness in JIS-C hardness of the outer core is lower than the surface hardness of the inner core by 2 to 30.

- 2. The multi-piece solid golf ball according to Claim 1, wherein the outer core is formed from a rubber composition comprising polybutadiene, a co-crosslinking agent, an organic peroxide and a filler.
- 3. The multi-piece solid golf ball according to Claim 2, wherein the co-crosslinking agent for the outer core is magnesium methacrylate.
- 4. The multi-piece solid golf ball according to Claim 1, wherein the outer core has a thickness of 0.2 to 0.9 mm.
- 5. The multi-piece solid golf ball according to Claim 1, wherein the outermost layer of the cover has a

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thickness of 1.0 to 3.0 mm and a surface hardness in Shore D hardness of 58 to 75.